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LILIAN M. DE MENEZES, MARIANNA RUSSO, GIOVANNI URGÀ



Measuring Liquidity in Gas Markets: The Case of the UK National Balancing Point¹

Lilian M. de Menezes (Cass Business School), *Marianna Russo (ESRI, TCD),
Giovanni Urga (Cass Business School, Università di Bergamo)

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OVERVIEW

Liquidity is the ability to match buyers and sellers at the lowest transaction costs. Therefore, in a liquid market, executing a transaction over a short-time horizon does not imply higher costs than spreading the same transaction over a longer horizon.

Policymakers and practitioners traditionally use the churn ratio to measure liquidity in gas markets. The churn ratio is the ratio of traded volume to actual physical delivery. However, this measure does not consider the impact of trading activity on prices.

This research focuses on applying different measures of liquidity, which are used in financial markets, to measure and assess the impact of trading activity on prices. The UK National Balancing Point (NBP) is used as a case study, since it is the most mature hub for gas trading in Europe. Therefore, conclusions from this study can be extended to other gas markets.

The research shows that a positive correlation exists between trading activity and prices in the market. However, the strength of this correlation changes over time, depending upon market conditions. Specifically, in the presence of oversupply the impact of trading activity on prices is lower, thus implying that trading a high amount of gas is less expensive, and liquidity is high. Consequently, risk management costs are also less expensive.

¹ This Bulletin summarizes the findings from: de Menezes, M.L., Russo, M., and Urga, M., Measuring and Assessing the Evolution of Liquidity in Forward Natural Gas Markets: The Case of the UK National Balancing Point", *The Energy Journal* 40 (1), 143-169. Available online: <https://doi.org/10.5547/01956574.40.1.lmen>.

BACKGROUND

The research uses measures and statistical methods to estimate: 1) how the volume of gas traded in a one-hour time-interval affects gas prices in the same time-interval; 2) whether the relationship between traded volume and prices changes over time. The analysis is carried out during a 5-year period.

POLICY IMPLICATIONS

Liberalised and competitive energy markets should offer sufficient opportunities for trading at a reasonable cost and with a credible price. Measuring liquidity becomes therefore crucial, since liquidity affects risk management and investment decisions, with implications for the competitiveness of energy markets.

This research overcomes the limitations of the traditionally used churn ratio and provides more informative measures of liquidity, which assess the link between trading activity and prices in energy markets. Therefore, these measures are useful to policymakers and investors, who are interested in the impact of low liquidity on price volatility.

Low liquidity increases the impact of trading activity on prices, thus limiting the opportunity for trading and the development of gas hubs. Low liquidity may also reduce the value of gas storage facilities. When liquidity is low, storage operators have greater difficulties buying or selling and so the costs of a storage facility increase.

Whitaker Square,
Sir John Rogerson's Quay,
Dublin 2
Telephone **+353 1 863 2000**
Email **admin@esri.ie**
Web **www.esri.ie**
Twitter **[@ESRIDublin](https://twitter.com/ESRIDublin)**